June 17, 2020 SAC Meeting Notes

SAC Members Present:
James Bowen
Jessie Jarvis
Jud Kenworthy
Martin Lebo
Michael O'Driscoll
Hans Paerl
Fritz Rohde
Astrid Schnetzer
Wilson Laney
Lauren Petter

Select DWR Staff Present:
Jim Hawhee, Chris Ventaloro, Connie Brower, Peter Johnston (WebEx host)

The PowerPoint presentations and meeting agenda are available online on the SAC website. This meeting was held online via WebEx due to Covid-19 concerns.

1. **Convene, opening comments (Jim Hawhee)**
    a. Our usual facilitator Jenny Halsey isn't present, also this is our first remote meeting.

2. **Agenda Items: Updates on SACs position on High Rock Lake and discussion of internal DWR work over the last few months (Jim Hawhee)**
    a. Jim Hawhee will follow up with SAC and CIC members to schedule meetings for the rest of 2020, and those meetings will probably be remote.

3. **Nomination of SAC Co-Chairs**
    a. Jim Hawhee emphasized that DWR staff will drive the process regarding the Albemarle Sound and Chowan River, unlike for High Rock Lake where the SAC members carried a heavier workload.
    b. A motion by Wilson Laney and seconded by Fritz Rohde to nominate Drs. Paerl and Kenworthy as co-chairs passed unanimously.

4. **Presentation summarizing "A Chlorophyll a Criterion for High Rock Lake" which describes the SAC recommendations regarding High Rock Lake (James Bowen)**
    a. These recommendations were agreed upon in December 2018 but the supporting documentation, which was authored by all 12 SAC members, was recently finished.
    b. Review of the Executive Summary:

i. This document is a site-specific chlorophyll a criterion for High Rock Lake. These criteria were developed to consider and protect the designated uses of High Rock Lake (aesthetics, water supply, aquatic habitat, and recreation). These criteria would consider the magnitude (chlorophyll a concentration), duration (period of time over which that concentration is considered), and frequency (how often should that concentration be reached or exceeded).
ii. One map of the lake highlighted places were water quality monitoring data was present, and another map showed the observed chlorophyll a concentrations and exceedances in the lake from 2005-06 and 2008-10 sampling programs.
iii. Data on other indicators of water quality were also reviewed, such as DO, pH, water clarity, algal abundance, and phytotoxin concentration.
iv. Designated Use Attainment: Water quality conditions supported a healthy sport fishery.
    1. Each designated use was considered, and the chlorophyll a range that would allow those uses to be attained was determined to be 25-40 µg/L.
    2. Table 4.4 lists the following proposals:
        a. Magnitude: (35 µg/L)
        b. Period/Duration: Calculated geomean based on all data from growing season
        c. Season/Duration: growing season of April-October
        d. Frequency: maximum exceedance frequency of one-in-three, and
        e. Spatial Considerations: open waters
v. Another goal of this process was to produce a framework that could be applied to other systems.
vi. Further dissemination of this document across state government was encouraged. One option is to condense this document into a scientific journal article, another is to use this as a monograph that will go into a relevant book or issue. However, this process would take more work.

5. **Logistical Updates (Jim Hawhee)**
    a. The next step is for the Criteria Implementation Committee to review the Chlorophyll a criterion document, and Jim Hawhee will work with the CIC to set up a public meeting to do that.
    b. SAC has been working with stakeholders in the High Rock Lake watershed, including the Yadkin-Pee Dee River Basin Association, to develop a nutrient management strategy. Anyone who wants to further engage in that process should email Jim Hawhee.

6. **Overview of EPA's Draft Numeric Nutrient Criteria for Lakes & Reservoirs (Chris Ventaloro and Connie Brower)**

a. This document provides statistical stressor-response models to determine lake criteria for chlorophyll-a and TP and TN-DIN (minus dissolved inorganic N). These models are based on data collected in 2007 and 2012.
b. Chlorophyll a criteria: Addresses multiple risk metrics for aquatic life and human health uses. Duration is recommended as a growing season geometric mean, and frequency is recommended as non-to-exceed.
c. TN and TP Criteria: Lakes data used to establish relationships between:
    i. TP (various compartments), chlorophyll a, lake depth, ecoregion geography and turbidity.
    ii. TN (various compartments), chlorophyll a and ecoregion geography.
    iii. These TN and TP models are similar except impact of N content of inorganic suspended sediment on chlorophyll a was negligible.
    iv. TN and TP models provide two criteria for each. One is based on the ambient concentration and the other is based on the limiting relationship. Duration is recommended as a growing season geometric mean, and frequency is recommended as non-to-exceed.
d. Demonstration of Interactive Model Tools
e. After the presentation, Jim Hawhee noted that the SAC will be working to develop comments for EPA. Then there was a brief discussion of the presentation.

7. DO Criteria for Albemarle Sound and Chowan River (Pam Behm)

a. Is the current assessment methodology (surface) for DO representative for Chowan and Albemarle? The approach is data evaluation. If yes, we can move on to other parameters. If no, we can move over to assessment to address recommendations.
b. Review of NC DO Standard in Saltwater and notation of measuring stations in Albemarle Sound and Chowan River
c. Explanation of problematic DO in upper Chowan
d. Summary: Albemarle assessment methodology appears adequate. The Chowan assessment methodology appears representative, but there is low DO in headwaters throughout the water column. The cause of low DO in headwaters will be evaluated for 2020 303(d) impairment decision.
e. Discussion and Q&A

8. Candidate Algal Criteria for the Chowan River and Albemarle Sound (Jim Hawhee)

a. There are a lot of community complaints about water quality, but for the most part, these waterbodies are meeting our chlorophyll a standards for algae.
b. The SAC is looking at Candidate Algal Criteria for:
    i. Chlorophyll a
    ii. Phycocyanin
    iii. Exposure or Recreational Contact Advisory Days
    iv. Cyanotoxins
    v. Algal Density

vi. Algal Biovolume

c. Discussion about this Candidate Algal Criteria

9. Update on DWR's Work (Jim Hawhee)

a. DWR meets internally every few weeks and welcomes feedback from the SAC. That information can be emailed to Jim Hawhee by the end of the month.